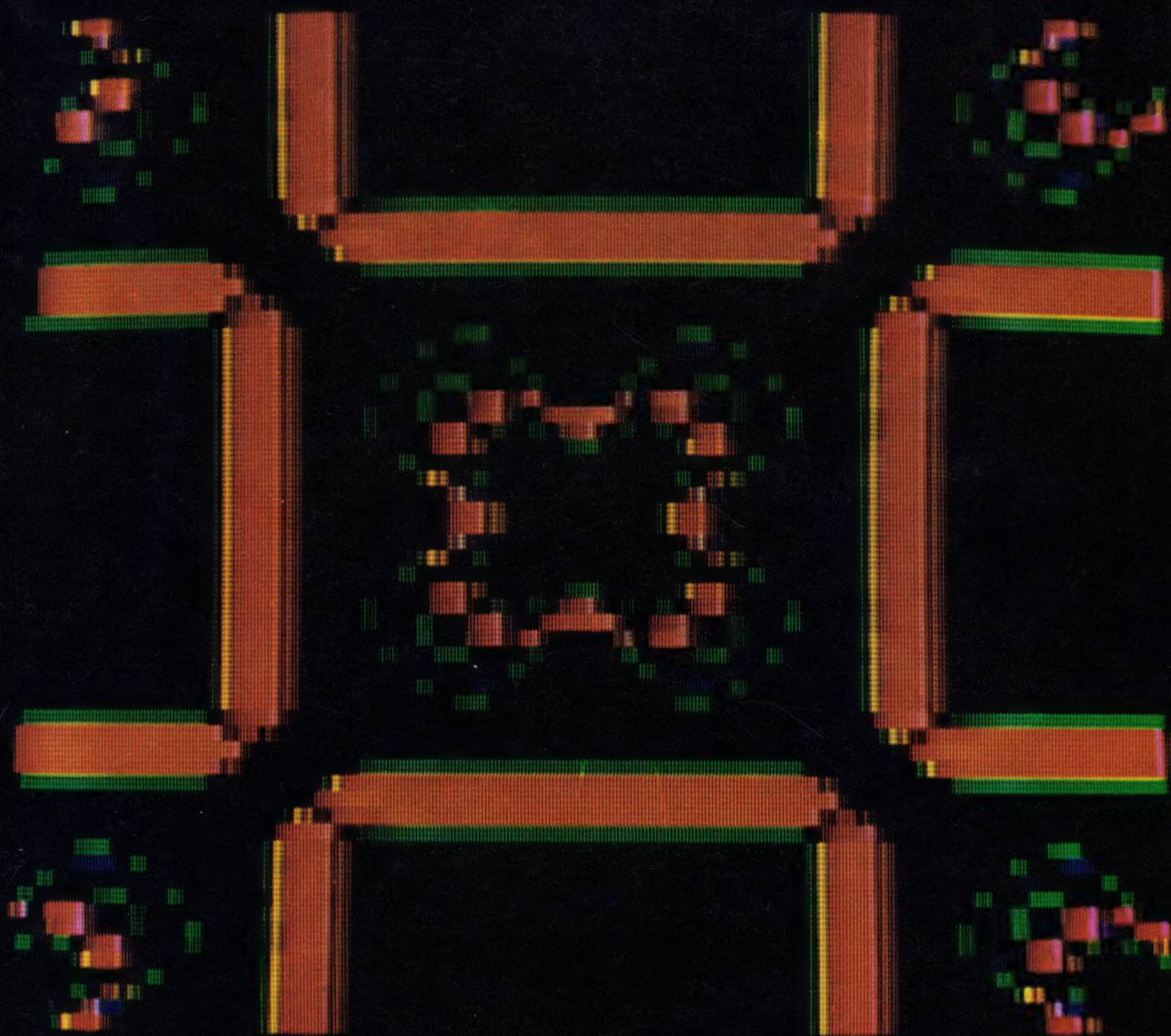




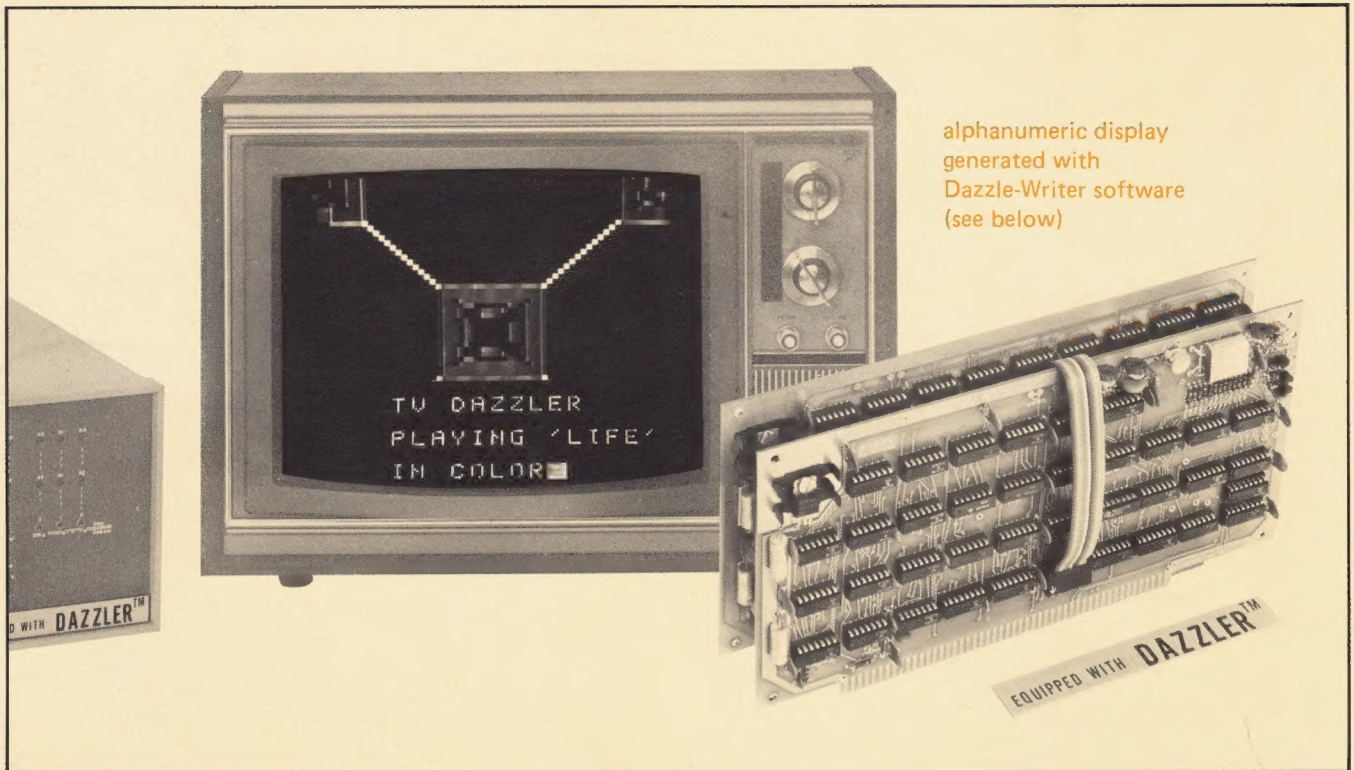
# **Cromemco**

Specialists in computer peripherals



**Advanced peripherals for your microcomputer**





## TV Dazzler™

... a microcomputer interface  
that lets a color TV  
be your computer display terminal

- inexpensive
- unbelievably versatile
- beautiful displays of computer games
- for hobbyists
- for engineers
- for educators
- for business

Cromemco's new computer/tv interface circuit lets you have a full-color computer display terminal for little more than a black-and-white terminal.

The Cromemco interface also lets you do vastly more with your color terminal than you can do with ordinary black-and-whites.

We call our interface the TV Dazzler™. It consists of two circuit boards that plug directly into your Altair 8800 or IMSAI 8080 computer.

### ALPHANUMERICS PLUS ACTION, AND GRAPHICS

The Dazzler™ maps your computer memory content onto your color tv screen in full color.

That doesn't mean just that you see alphanumeric in color. You can display *any* information in memory. And do so in color.

### NEEDS ONLY 2K MEMORY

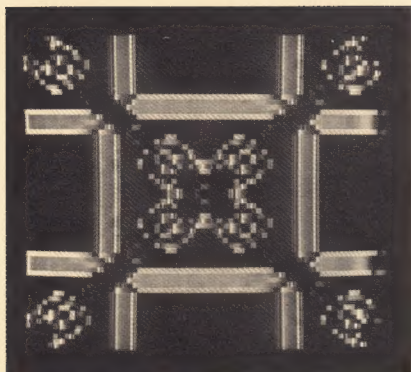
Technically, the Dazzler™ scans your computer memory using direct-memory access (DMA). It formats each memory bit into a point on the tv screen to give a 128 x 128-element picture. Only a 2K-byte computer memory is required (only 512 bytes for a 32 x 32 picture). The quality of the pictures is evident in the photos.

The Dazzler™ output is a video signal that goes directly to the tv video amp or to the antenna terminal through an inexpensive commercially-available device.

### INEXPENSIVE — AND SO MUCH BETTER

You can see from the list below that the Dazzler™ is little if any more in price than an ordinary b/w interface or tv typewriter. But it does much more.

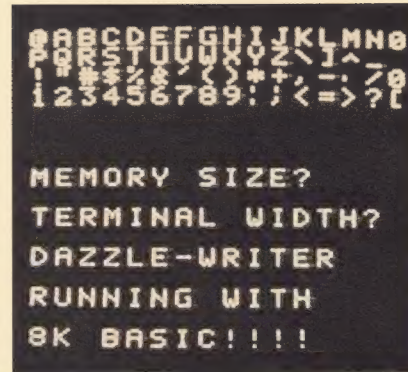




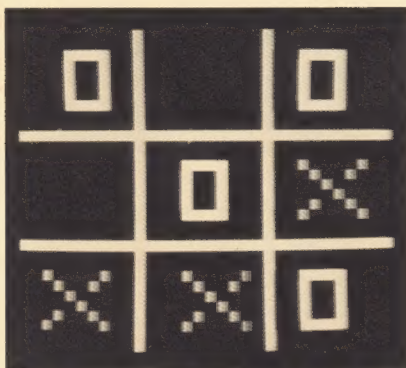
TV display pattern obtained during a sequence of the computer game *LIFE* from Cromemco software (below). Display is in beautiful color (see cover).



An example using Cromemco's *DAZZLE-MATION* software. A second tape ("Magenta Martini") was used to obtain above action display. This tape is included with *DAZZLE-MATION* as a use example.



Top four lines show range and style of alphanumerics obtainable with Cromemco's *DAZZLE-WRITER* software. Query lines are first two prompts from *MITS BASIC*.



Sequence from Cromemco's *TIC-TAC-TOE* software which lets you play the computer. Don't be sure you'll always win—we've made it rough.



Sequence from Cromemco's *KALEIDOSCOPE* software. This program runs without keyboard entry, gives you stunning color display.

ALL OF THE ABOVE ARE BEAUTIFUL COLOR DISPLAYS ON THE TV SET

### DISPLAYS IN COLOR

You can display computer games or animated shows (rocket ships). What's more, you can display business or technical graphics — multi-colored charts, graphs,

histograms, educational material — all from computer memory. Even light shows. Not even the biggest computer manufacturers offer all this in color.

### ORDER NOW

### BY MAIL OR AT YOUR COMPUTER STORE

If you're into computer (or want to be), if you want to invent these beautiful displays or games, or to plot colorful material inexpensively at home or in business, the *Dazzler™* is for you.

Not only is it reasonable, but it's sold at computer stores from coast to coast.

Or order directly by mail on your bank card.

TV *DAZZLER™* (complete kit) . . . . . \$215  
TV *DAZZLER™* (fully assembled  
and tested) . . . . . \$350

### SOFTWARE

(punched paper tape with documentation)

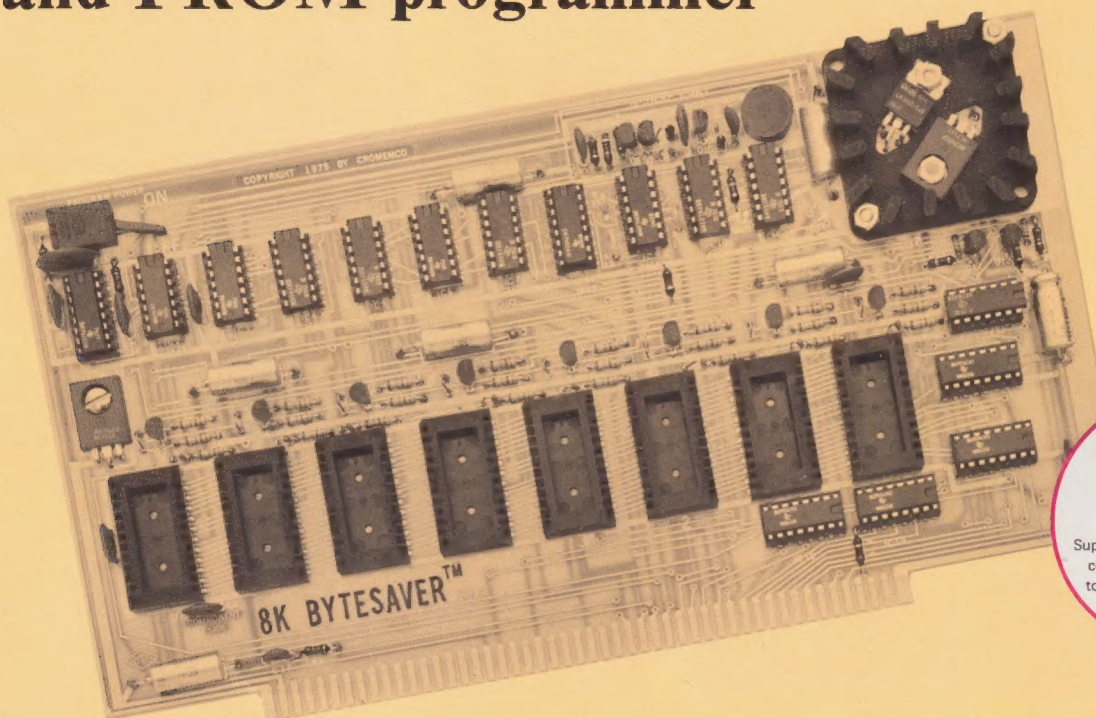
*LIFE* in full color . . . . . \$15  
*KALEIDOSCOPE* in full color . . . . . \$15  
*DAZZLE-WRITER* (for  
alphanumeric displays in color) . . . . . \$15  
*DAZZLE-MATION* (for computer-  
generated animated displays) . . . . . \$15  
*TIC-TAC-TOE* (you play  
the computer) . . . . . \$15

See "ordering info" on back cover.



**Cromemco**

# BYTESAVER memory board and PROM programmer



Supplied with one 2704 PROM containing special software to transfer RAM content to PROM and PROM to RAM.

Cromemco's popular BYTESAVER™ memory board gives you two of the most-wanted features in microcomputer work:

- (1) a simple, easy way to store your computer programs in programmable read only memory (PROM).
- (2) a PROM memory board with the capacity for a full 8K bytes of PROM memory storage.

## ECONOMICAL

The BYTESAVER™ is both a place and a way to store programs economically. It transfers programs from the non-permanent computer RAM memory to the permanent PROM memory in the BYTESAVER™. Once your program is in the BYTESAVER™, it's protected from power turn-offs, intentional or accidental. The PROMs used with BYTESAVER™ are UV erasable and can be used again and again.

The BYTESAVER™ itself plugs directly into your Altair 8800 or IMSAI 8080.

## PROM PROGRAMMER

Many people are surprised to learn that in the BYTESAVER™ you also

have your own PROM programmer. But it's so. And it saves you up to hundreds of dollars, since you no longer need to buy one separately.

The built-in programmer is designed for the 2704 and 2708 PROMs. The 2708 holds 1K bytes, four times the capacity of the well-known older 1702 PROM (yet cost-per-byte is about the same). The 2708 is also fast—it lets your computer work at its speed without a wait state. And it's low-powered. With 2708's in all 8 sockets, the BYTESAVER™ is still within MITS bus specifications, drawing only about 500 mA from the +8V bus. A complement of 2708 PROMs gives the BYTESAVER™ its full 8K capacity.

## HOLDS LARGE PROGRAMS

The BYTESAVER's™ 8K-byte capacity lets you store the larger and more powerful programs. 8K BASIC, for example, easily fits in the BYTESAVER™ capacity of 8 PROMs. One 1K PROM will hold many games such as Cromemco's DAZZLER-LIFE or DAZZLE-WRITER.

## NO KEYBOARD NEEDED

The BYTESAVER™ comes with special software programmed into a 2704 PROM. This software controls

transfer of the computer RAM content to the BYTESAVER™ PROM.

So you are ready to go. You don't even need a keyboard. Just set the computer sense switches as instructed in the BYTESAVER™ documentation.

Transfer of memory content to PROM ("burning") takes less than a minute. The BYTESAVER™ software controls computer lights to verify complete and accurate transfer of memory content.

The software also programs any of the other 7 PROM positions in the BYTESAVER™ as readily as the first.

And when used to transfer information from the BYTESAVER™ PROMs to RAM, the special design of the software allows loading a large program such as 8K BASIC in one second.

## AVAILABLE NOW — STORE/MAIL

BYTESAVER™ kit . . . . . \$195  
(Model 8KBS-K)

BYTESAVER™ assembled . . . . \$295  
(Model 8KBS-W)

BYTESAVER™ also available with one software-programmed 2708 PROM (instead of 2704) @ \$220 (kit) or \$320 (assembled). BYTESAVER with no PROMs is \$145 (kit) or \$245 (assembled). Additional 2704 is \$50; additional 2708 is \$75.

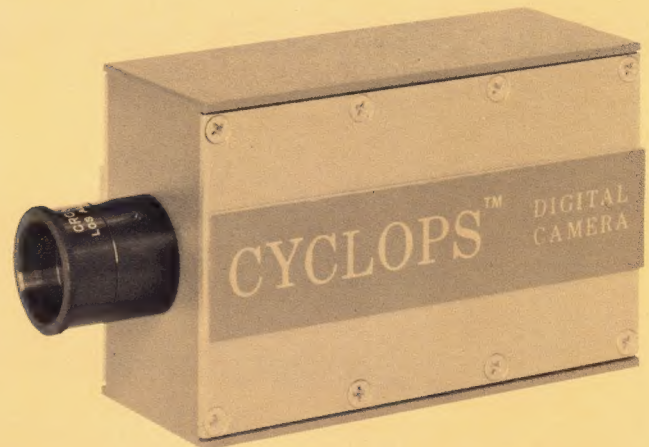
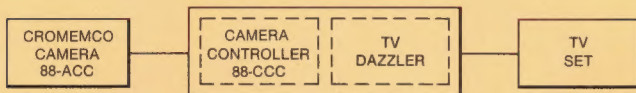


**Cromemco**

# Cyclops Camera

## a low-cost digital TV camera

- for hobby work
- for security work
- for night viewing
- for pattern recognition
- for automated control systems
- for special-design projects



The Cromemco 88-ACC is an inexpensive general-purpose digital TV camera that can be used with the Altair 8800 or IMSAI 8080 computers. Signals from the camera are stored in the computer memory. Thus, by suitably programming the computer you have a wide range of possible uses for the camera-computer combination that are totally beyond the usual computer applications (see list above).

(If you then connect a TV Dazzler™ (pp 2-3) and an ordinary home TV set to your computer, you can see on your TV what the camera sees. The camera signal can be reformatted by the computer for the TV set with suitable software.)

### USES IMAGE SENSOR

The camera uses an image sensor rather than the customary expensive vidicon tube. This sensor permits Cyclops™ to be much simpler (and much less costly) than the regular TV cameras. Yet it provides a 32-element x 32-element picture that can be used for many purposes such as surveillance or pattern recognition.

Cyclops™ is provided with a digital differential output so that you can connect it to virtually any digital circuitry.

All connections to the Cyclops™ 88-ACC camera are made to a connector on the camera rear. All necessary voltages and signals are provided by the 88-CCC interface accessory which plugs into the Altair 8800 or IMSAI 8080 computer.

### SMALL AND LIGHT

The 88-ACC camera is pleasingly compact. Overall dimensions are only 4-1/2" x 2-3/4" x 1-3/4". The case is extruded aluminum finished in blue baked enamel.

The camera is equipped with a medium-fast f2.8 25-mm lens that is suited to general work.

For night viewing, the camera would require infrared light on the viewed scene.

### AVAILABLE NOW

Cyclops™ Digital Camera kit	
(Model 88-ACC-K) . . . . .	\$195
Cyclops™ Digital Camera assembled	
(Model 88-ACC-W) . . . . .	\$295

### CYCLOPS™ CAMERA CONTROLLER

This Cromemco circuit interfaces the Cyclops™ camera to the Altair 8800 or IMSAI 8800 computer.

The 88-CCC Controller consists of two circuit boards that plug directly into the computers. The 88-CCC then supplies all needed signals and power for the Cyclops™ camera.

Using the Cyclops™ controller permits software control of exposure, frame rate, and memory allocations for picture storage. Direct Memory access (DMA) is used to store the picture in the computer memory.

Cyclops™ Camera Controller kit	
(Model 88-CCC-K) . . . . .	\$195
Cyclops™ Camera Controller assembled	
(Model 88-CCC-W) . . . . .	\$295

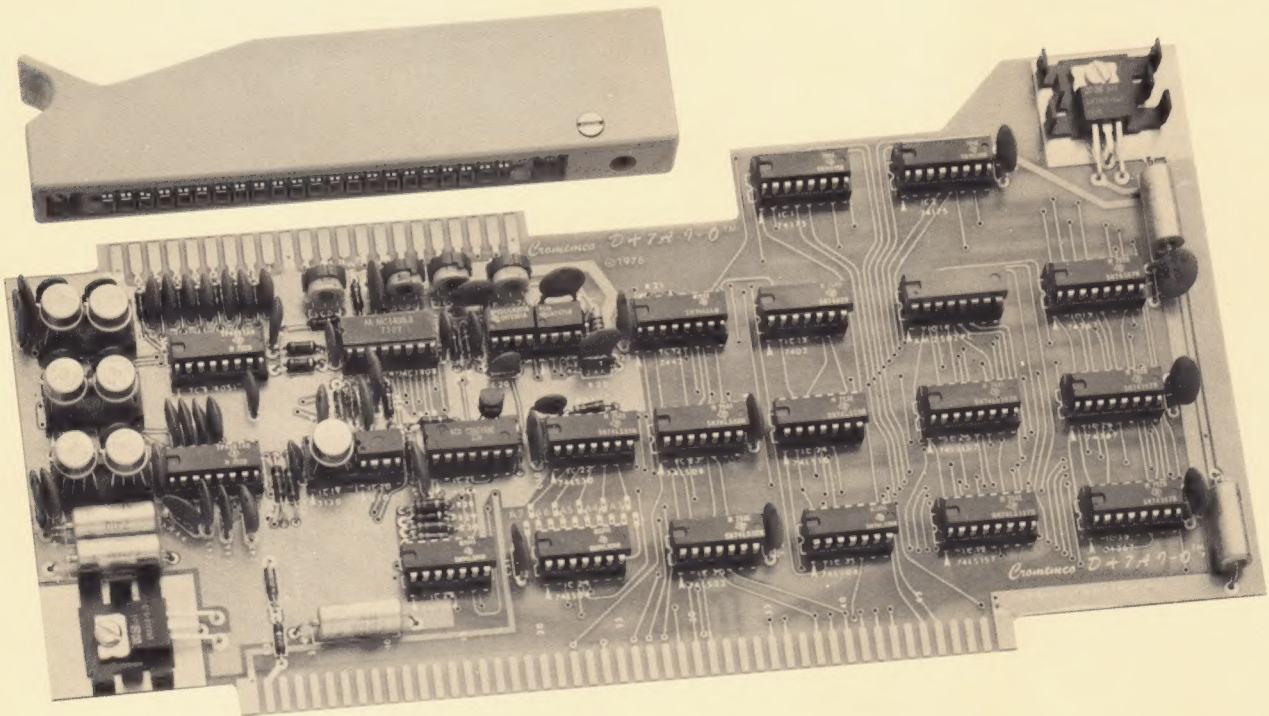


**Cromemco**

**D+7AI/O™**

**Multi-channel analog-to-digital  
and digital-to-analog  
microcomputer interface**

Available  
June '76

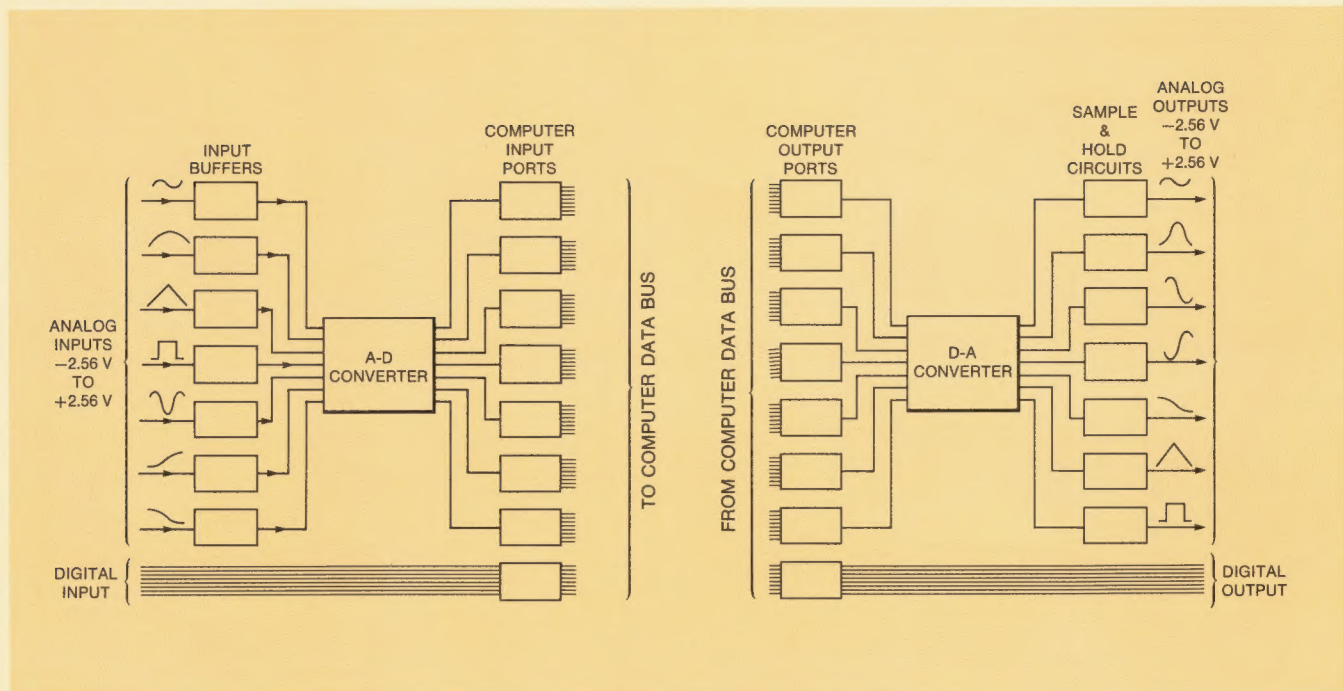


**An inexpensive way to couple  
your digital computer to an analog world**

**Use it to**

- interface joysticks to computers
- turn your computer into a music synthesizer
- generate oscilloscope graphics
- any number of other uses

**Cromemco proudly presents one of the most useful  
and important computer interfaces yet developed — the D+7AI/O™**



SIMPLIFIED BLOCK DIAGRAM OF CROMEMCO D+7AI/O™

The new Cromemco D+7AI/O™ inputs analog signals to your computer AND outputs analog signals from your computer. That's why we say it couples your digital computer to an analog world.

The D+7AI/O™ has 7 channels of analog-to-digital conversion and 7 channels of digital-to-analog conversion.

It also has one channel of digital interface to the computer.

#### SIMPLE TO USE

The D+7AI/O™ works with simple "INPUT" and "OUTPUT" instructions. No further software is required. Only an "INPUT" instruction from the desired port is needed to initiate the A-D conversion and read in the 8 bits of data.

During A-D conversion the D+7AI/O™ automatically holds down the computer READY line for 5 microseconds (conversion time is less than 5 microseconds). Sample-and-hold circuitry latches the analog output

Analog voltage range is from -2.56 to +2.56 volts.

Addresses of the 8 input and 8 output ports are jumper-wire selectable in blocks of 8.

#### PLUGS INTO ALTAIR/IMSAI

The D+7AI/O™ plugs directly into your Altair 8800 or IMSAI 8080 computer. A connector is provided (photo) to connect to the 8 input and 8 output ports.

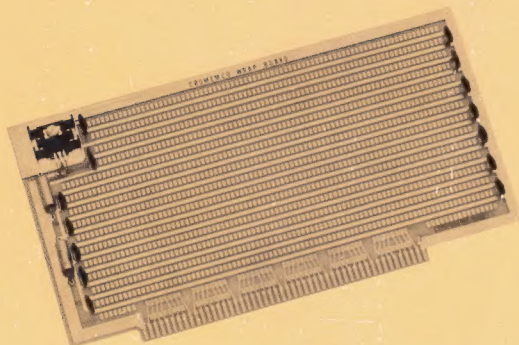
#### AVAILABLE JUNE — STORE/MAIL ORDER EARLY

The D+7AI/O™ is bound to be enormously popular. Get your order in early so you won't be disappointed by a long waiting list.

Cromemco D+7AI/O™ Interface kit . . . . . \$145  
Cromemco D+7AI/O™ Interface assembled . . . \$245



## Wire Wrap Board



A high-quality wire wrap board for building your own cards for the Altair 8800 or IMSAI 8080 computers. Will hold over 70 integrated circuits. A 5-volt power supply is included on the board. Uses tantalum decoupling capacitors and disc ceramic bypass capacitors. Edge contacts are gold-plated for long, trouble-free life.

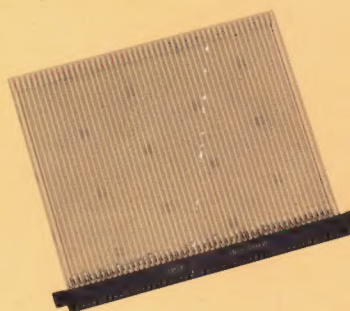
- Wire Wrap Board kit (Model WWB-2K) . . . . \$35
- Wire Wrap Board assembled (Model WWB-2W). . \$45

## Extender Card

The card you need when experimenting with or trouble-shooting the Altair 8800 or IMSAI 8080 computers. Extends computer boards above case for easy connection of voltmeter, logic probe, or oscilloscope. Compatible with all Altair/IMSAI boards. Edge contacts are gold plated for long, trouble-free life.

Connector is included (photo).

- Extender Card kit (Model EXC-1K) . . . . \$35
- Extender Card assembled (Model EXC-1W) . . . \$45



## Ordering information

Cromemco's advanced peripherals are sold at computer stores from coast to coast.

Or you can order directly by mail from Cromemco.

Cromemco ships promptly — most of the time from stock.

- Mastercharge and BankAmericard are accepted with signed order. Please show complete card number and expiration date.

- Mail orders are shipped prepaid if fully paid with order.
- Purchase orders accepted subject to credit approval.
- Shipments to outside U.S. — Payment must accompany order and must include a 10% surcharge to cover additional shipping and handling charges.
- California users add 6% sales tax.

Prices at stores may be slightly higher to cover stocking costs.

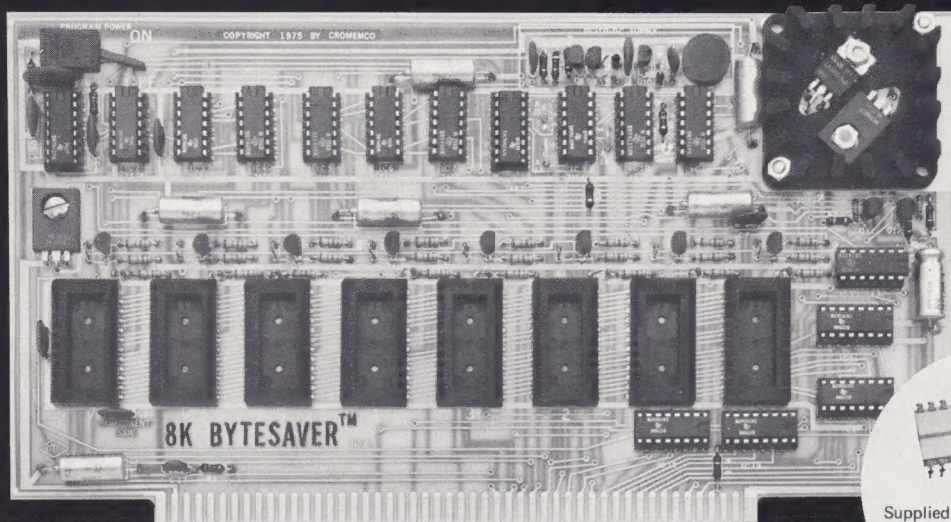


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One First St., Los Altos, CA 94022 • (415) 941-2967





Supplied with one 2704 PROM containing special software to transfer RAM content to PROM and PROM to RAM.

# How to save your programs-- and have a PROM programmer, too

Cromemco's popular BYTESAVER™ memory board gives you two of the most-wanted features in microcomputer work:

- (1) a simple, easy way to store your computer programs in program-mable read only memory (PROM).
- (2) a PROM memory board with the capacity for a full 8K bytes of PROM memory storage.

## ECONOMICAL

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The BYTESAVER™ itself plugs directly into your Altair 8800 or IMSAI 8080.

## PROM PROGRAMMER

Many people are surprised to learn that in the BYTESAVER™ you also have your own PROM programmer. But

it's so. And it saves you up to hundreds of dollars, since you no longer need to buy one separately.

The built-in programmer is designed for the 2704 and 2708 PROMs. The 2708 holds 1K bytes, four times the capacity of the well-known older 1702 PROM (yet cost-per-byte is about the same). The 2708 is also fast—it lets your computer work at its speed without a wait state. And it's low-powered. With 2708's in all 8 sockets, the BYTESAVER™ is still within MITS bus specifications, drawing only about 500 mA from the +8V bus. A complement of 2708 PROMs gives the BYTESAVER™ its full 8K capacity.

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## NO KEYBOARD NEEDED

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So you are ready to go. You don't

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Transfer of memory content to PROM ("burning") takes less than a minute. The BYTESAVER™ software controls computer lights to verify complete and accurate transfer of memory content.

The software also programs any of the other 7 PROM positions in the BYTESAVER™ as readily as the first.

And when used to transfer information from the BYTESAVER™ PROMs to RAM, the special design of the software allows loading a large program such as 8K BASIC in one second.

## AVAILABLE NOW — STORE/MAIL

The BYTESAVER™ is sold at computer stores from coast to coast. Or order by mail from Cromemco. Cromemco ships promptly. You can have the BYTESAVER™ in your computer within a week after your order is received.

BYTESAVER™ kit . . . . . \$195  
(Model 8KBS-K)

BYTESAVER™ assembled . . . . \$295  
(Model 8KBS-W)

Shipped prepaid if fully paid with order.

California users add 6% sales tax.

Mastercharge and BankAmericard accepted with signed order.

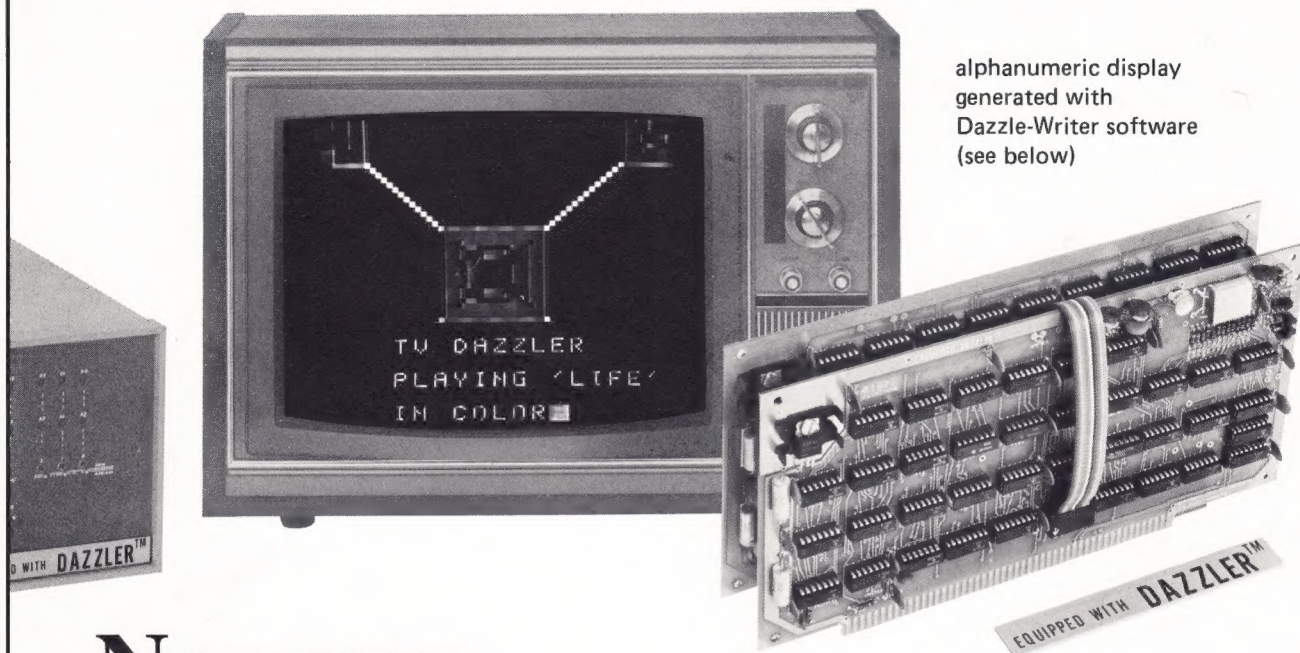


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alphanumeric display  
generated with  
Dazzle-Writer software  
(see below)

# Now your color TV can be your computer display terminal

## New capabilities, too

Cromemco's new computer/tv interface circuit lets you have a full-color computer display terminal for little more than a black-and-white terminal.

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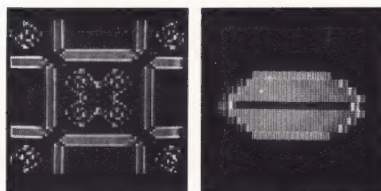
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## LIFE in color

You can display computer games or animated shows (rocket ships). What's more, you can display business or technical graphics — multi-colored charts, graphs, histograms, educational material — all from computer memory. Even light shows. Not even the biggest computer manufacturers offer all this in color.



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TV DAZZLER® (complete kit)	...	\$215
TV DAZZLER® (fully assembled and tested)	...	\$350

## SOFTWARE

(punched paper tape with documentation)	
LIFE in full color	... \$15
KALEIDOSCOPE in full color	... \$15
DAZZLE-WRITER (for alpha- numeric displays in color)	... \$15

Shipped prepaid if fully paid with order.  
California users add 6% sales tax.

Mastercharge and BankAmericard accepted  
with signed order.

Delivery: from stock for immediate shipment.



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